Chapter Six
FINANCIAL PLAN

FINANCIAL PROGRAM

The successful implementation of the Avra Valley Airport Master Plan will require sound judgement on the part of Pima County Airport Management staff. Among the more important factors influencing decisions to carry out a recommendation are timing and airport activity. Both of these factors should be used as references in plan implementation.

Experience has indicated that major problems have materialized from the standard format of past planning documents. These problems center around the plan's inflexibility and inherent inability to deal with new issues that develop from unforeseen changes that may occur after it is completed. The demand-based format used in the development of this master plan has attempted to deal with this issue.

While it is necessary for scheduling and budgeting purposes to consider the timing of airport development, the actual need for facilities is established by airport activity. Proper master planning implementation suggests the use of airport activity levels rather than time as guidance for development. Tracking airport activity levels and then comparing these to forecast activity levels and facility requirements provides decision-makers with the ability to anticipate and plan for when actual facilities are needed.

This chapter of the Master Plan is intended to become one of the primary references for decision-makers responsible for implementing master plan recommendations. Consequently, the narrative and graphic presentations provides an understanding of each recommended development item. This understanding will be critical in maintaining a realistic and cost-effective program that provides maximum benefit to the surrounding communities, Pima County, the State of Arizona, the FAA, and airport users.

The presentation of the financial plan has been organized into two sections. First, the airport development schedule is presented in narrative and graphic form. Secondly, airport improvement funding sources on the federal, state, and local levels are identified and discussed.

AIRPORT DEVELOPMENT SCHEDULE AND COST SUMMARIES

The airport development schedule presented in this chapter, outlines the costs for each recommended project and estimates when development should take place. The program outlined on the following pages has been evaluated from a variety of perspectives and represents the culmination of a comparative analysis of basic budget factors, demand, and priority assignments.

Since forecast demand and operational needs can change, frequently on short notice, the airport development schedule has been divided into planning horizons, reflecting short term (0-5 years), intermediate (6-10 years), and long term (10-20 years) goals and needs. Planning horizons are intended to reflect the fact that many future improvements for the airport are demand-based, rather than time-based, and that the actual need to improve facilities will be linked to specific and verifiable activity. The airport development schedule should be viewed as a flexible document which can be modified to reflect actual growth in airport activity. The short-term planning period covers items of highest priority. Because of their priority, these are the only items scheduled year-by-year so as to be easily incorporated into County, State, and FAA programming.

Table 6A summarizes the airport development schedule for Avra Valley Airport. In addition to the listing of actual improvement projects, an estimate has been made of the timing for implementation and federal and state funding eligibility for each airport improvement project as well as the local share costs for completing the recommended improvements. Due to the conceptual nature of a master plan, implementation of capital improvement projects should occur only after further refinement of their design and costs through engineering and/or architectural analyses. Capital costs in this chapter should be viewed only as estimates subject to further refinement during design.

Additionally, in **Chapter Four, Development Alternatives,** it was stated that property would be acquired or future sites would be reserved for the following landside facilities: T-Hangar development areas, FBO/conventional hangar parcels, aviation related development areas, aircraft wash rack, and an Airport Rescue and Firefighting Facility (ARFF). For financial planning purposes, estimated acquisition, construction or development costs for these items have been included for their respective planning horizons.

SHORT TERM PLANNING HORIZON IMPROVEMENTS

As indicated above, the short term planning horizon is the only development stage that is correlated to time. This is because development within this initial period is concentrated on the most immediate needs of the airport. Therefore, the program is presented year-by-year to assist in capital improvement programming.

The short term planning horizon outlined in **Table 6A** reflects the anticipated capital needs of the Airport over the next five fiscal years (FY 1999-2000 to FY 2003-2004).

TABLE 6A
Capital Improvement Program - Short Term Planning Horizon

	Total Cost	FAA	ADOT	Local
FY 1999-2000				
1. Construct Fire Supply System	For Item 1, see Note 3 at the end of this table.			
2. Pavement Rehabilitation and Preservation (Existing T-Hangar Taxilanes and Runway 3-21 = ±100,000 s.y.)	$350,000	$0	$315,000	$35,000
3. Upgrade Airport Perimeter Fencing and Install Security Gates	$350,000	$318,710	$15,645	$15,645
4. Environmental Assessment - Runway Extensions and Property Acquisitions	$150,000	$136,590	$6,705	$6,705
5. Acquire Property to Protect Existing Runway 30 OFA and Ultimate Runway 30R Extension (±90 Acres)	$328,000	$298,677	$14,662	$14,662
Subtotal FY1999-2000	$1,178,001	$753,977	$352,012	$72,012
FY 2000-2001				
6. Acquire R.O.W. for Avra Valley Road Realignment (±60 Acres)	$220,000	$200,320	$9,834	$9,834
7. Construct Airport Sanitary Septic System	$200,000	$0	$0	$200,000
8. Construct T-Hangar Access Taxilanes (14,200 s.y.)	$462,000	$0	$415,800	$46,200
9. Construct 40 T-Hangar Positions	$1,685,000	$0	$0	$1,685,000
10. Construct Large Aircraft Ramp (9,000 s.y.)	$293,000	$266,806	$13,097	$13,097
11. Acquire Property to Protect Existing Runway 3 RPZ and Ultimate Runway 3 Extension (±40 Acres)	$146,000	$132,948	$6,526	$6,526
Subtotal FY 2000-2001	$3,006,000	$600,074	$445,257	$1,960,657
FY 2001-2002				
12. Acquire Property for Airport Expansion South of Avra Valley Road (±200 Acres)	$728,000	$662,917	$32,542	$32,542
13. Acquire Property to Protect Ultimate Runway 12L RPZ/MALSR/BRL (±74 Acres)	$269,500	$245,407	$12,047	$12,047
14. Construct Aircraft Tie-down Area (25 Positions)	$16,250	$14,797	$727	$727
15. Remove T-Hangar and T-Shade Hangar Structures within BRL (±35 Positions)	$25,000	$22,765	$1,118	$1,118
16. Remove Existing Tiedowns within RVZ	$81,000	$73,759	$3,621	$3,621
Subtotal FY 2001-2002	$1,119,750	$1,019,645	$50,055	$50,055
FY 2002-2003				
17. Construct Avra Valley Road Realignment	$6,820,000	$3,105,146	$152,427	$3,562,427
18. Construct Ultimate Airport Access Road	$780,000	$710,268	$34,866	$34,866
19. Construct T-Hangar Auto Parking (3,500 s.y.)	$68,250	$0	$61,425	$6,825
20. Install MALSR Lighting System to Runway 12L	$350,000	$350,000	$0	$0
21. Establish GPS Approach to Runway 12L	$0	$0	$0	$0
Subtotal FY 2002-2003	$8,018,250	$4,165,414	$248,718	$3,604,118
FY 2003-2004				
22. Extend Runway 3 by 499 feet to 4,700 feet (4,200 s.y.)	$249,900	$227,559	$11,171	$11,171
23. Runway 3: Extend MIRL (1,000 l.f.)	$26,000	$23,676	$1,162	$1,162
24. Runway 3-21: Install REIL (Both ends)	$91,000	$82,865	$4,068	$4,068
25. Runway 3-21: Install PAPI-2 (Both ends)	$91,000	$82,865	$4,068	$4,068
26. Extend Parallel Taxiway B by 499 feet to Runway 3 End (2,000 s.y.)	$91,000	$82,865	$4,068	$4,068
27. Taxiway B: Install MITL (9,400 l.f.)	$244,500	$222,642	$10,929	$10,929
28. Pavement Preservation (±90,000 s.y.)	$315,000	$0	$283,500	$31,500
Subtotal FY 2003-2004	$1,108,400	$722,472	$318,966	$66,966
Total Short Term Planning Horizon	$14,430,401	$7,261,582	$1,415,008	$5,753,808

Notes: 1. Each item's total cost includes a 30% design and engineering contingency factor.
2. Totals and subtotals may not agree due to rounding.
3. Costs for this system, which is currently in the design stage, are unknown at this time.

Overall, short term planning horizon improvements are estimated to cost approximately $14.4 million. Exhibit 6A provides a graphical depiction of these short term planning horizon improvements which are described in further detail in the following paragraphs.

Airside: In keeping with ADOT recommendations, a one-half mile visibility minimum GPS approach is to be implemented on Runway 12L. The visibility minimum specified for Runway 12L requires the installation of a medium intensity approach lighting system (MALSR) which extends approximately 2,400 feet out from the runway end. This lighting system along with the ultimate Runway 12L RPZ and BRL requirements will necessitate new property acquisitions of approximately 74 acres.

Runway 3 is to be extended 499 feet to an ultimate length of 4,700 feet. Included at this time will be the rehabilitation/preservation of the runway pavement for the existing length of Runway 3-21 (4,201 feet). To compliment Runway 3, Taxiway B will also be extended to match the new Runway 3 extension. These extensions will necessitate extending Runway 3's medium intensity runway edge lighting (MIRL), and Taxiway B's medium intensity taxiway lighting (MITL). These extensions plus the required ultimate RPZ for Runway 3 will require property acquisitions totaling approximately 40 acres. Further improvements to Runway 3 include replacing the existing VASI-2 (visual glide slope indicator) system with a PAPI-2 (precision approach path indicator) system, and the installation of REILs at each end of Runway 3-21.

Currently, Runway 30R's object free area (OFA) extends southeast across Avra Valley Road. To protect this required safety area and to accommodate the planned future extension of Runway 30R requires the acquisition of approximately 90 acres.

Landside: Improvements under this heading include the installation of a fire protection system consisting of a water supply, storage and distribution system, and fire hydrants. The implementation of this system is a requirement of the State Fire Marshall's office before any new construction can take place at Avra Valley Airport. At the time of this publication this system was in the design/planning stage.

Another project currently in the design/planning stage is the proposed upgrade to the Airport's security fencing. This project entails replacing existing barbed wire fencing with chain link fencing plus the installation of security gates. Specific details of this project with regard to timing, gate locations, etc., were unavailable at this time.

Pavement preservation/rehabilitation for those sections of the Airport's existing T-Hangar access taxilanes which are currently in fair to poor condition is scheduled for FY 1999-2000 of the short term planning horizon. This project will enhance airport safety and reduce the likelihood of damage to aircraft due to deteriorating pavement. The timing of this project is planned to coincide with the preservation/rehabilitation scheduled for Runway 3-21 (Table 6A, Item 2) as described earlier in the airside section of the short term planning horizon.

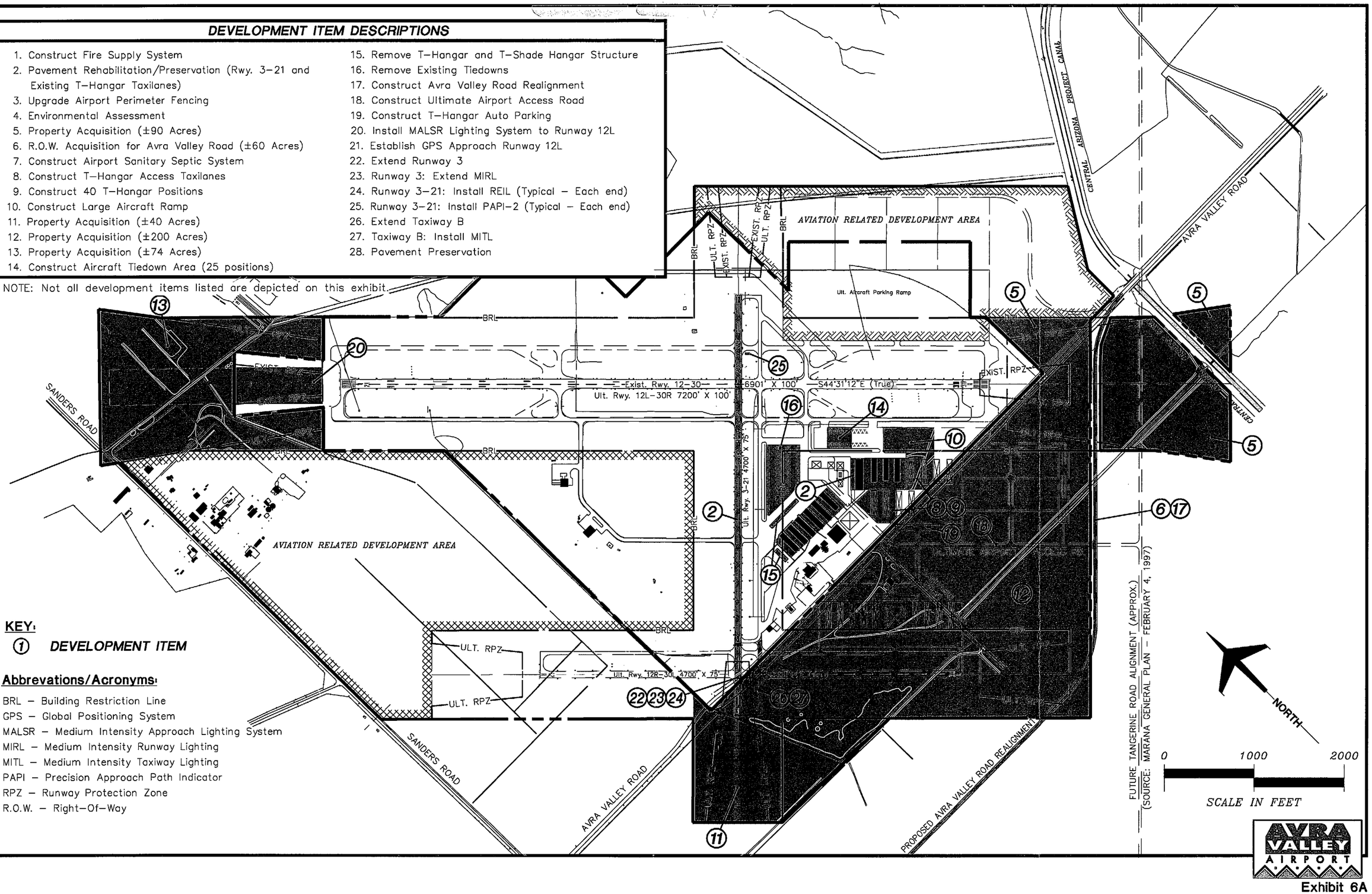
The previously discussed extension to Runway 3 and the property acquisition concerning Runway 30R will require the realignment of Avra Valley Road. The short term planning horizon includes both the right-of-way

98MP09-6A-7/2/1999

DEVELOPMENT ITEM DESCRIPTIONS

1. Construct Fire Supply System
2. Pavement Rehabilitation/Preservation (Rwy. 3–21 and Existing T–Hangar Taxilanes)
3. Upgrade Airport Perimeter Fencing
4. Environmental Assessment
5. Property Acquisition (±90 Acres)
6. R.O.W. Acquisition for Avra Valley Road (±60 Acres)
7. Construct Airport Sanitary Septic System
8. Construct T–Hangar Access Taxilanes
9. Construct 40 T–Hangar Positions
10. Construct Large Aircraft Ramp
11. Property Acquisition (±40 Acres)
12. Property Acquisition (±200 Acres)
13. Property Acquisition (±74 Acres)
14. Construct Aircraft Tiedown Area (25 positions)
15. Remove T–Hangar and T–Shade Hangar Structure
16. Remove Existing Tiedowns
17. Construct Avra Valley Road Realignment
18. Construct Ultimate Airport Access Road
19. Construct T–Hangar Auto Parking
20. Install MALSR Lighting System to Runway 12L
21. Establish GPS Approach Runway 12L
22. Extend Runway 3
23. Runway 3: Extend MIRL
24. Runway 3–21: Install REIL (Typical – Each end)
25. Runway 3–21: Install PAPI–2 (Typical – Each end)
26. Extend Taxiway B
27. Taxiway B: Install MITL
28. Pavement Preservation

NOTE: Not all development items listed are depicted on this exhibit.



KEY:

① *DEVELOPMENT ITEM*

Abbrevations/Acronyms:

BRL – Building Restriction Line
GPS – Global Positioning System
MALSR – Medium Intensity Approach Lighting System
MIRL – Medium Intensity Runway Lighting
MITL – Medium Intensity Taxiway Lighting
PAPI – Precision Approach Path Indicator
RPZ – Runway Protection Zone
R.O.W. – Right–Of–Way

AVRA VALLEY AIRPORT

Exhibit 6A
SHORT TERM PLANNING HORIZON IMPROVEMENTS
FY 1999-2000 THROUGH FY 2003-2004

acquisition (±60 acres) and construction of the proposed realignment. A new Airport access road will connect the Airport to the new Avra Valley Road alignment. This road will provide access to the existing terminal area, and eventually, will also service the proposed general aviation terminal facility (long term planning horizon), and proposed general aviation facilities located next to the future parallel runway (long term planning horizon).

As discussed in Chapter One, the Airport is currently serviced by 10 individual septic systems located throughout the Airport. Cost estimates for a commercial grade sanitary septic system to service the greater Airport has been included in the short term planning horizon. This system should be designed according to Airport demands and must provide for future expansion capability. Specific details regarding actual capacity and location, however, are beyond the scope of this report.

Four (4) T-Hangar structures (40 positions) are scheduled for the area southeast of the existing T-Hangar area which is adjacent to Taxiway A. Included at this time will be construction of the associated T-Hangar access taxilanes.

To the northeast of the new T-Hangar development area, a 9,000 s.y. large aircraft parking ramp will be constructed. This new ramp equals the parking capacity of the existing ramp. The existing large aircraft ramp to the northwest will be replaced by a new general aviation aircraft tiedown area. The existing aircraft tiedown area must be removed or abandoned because it is located within the runway visibility zones (RVZ) for Runways 12L-30R and 3-21 and violates the FAA's "unobstructed line-of-sight" RVZ requirements. With 25 positions, this new tiedown area will be used for both itinerant and local aircraft parking.

Additionally, the existing T-Hangar structure directly north of Tucson Aeroservice Center, Inc. (TAC, Inc.) and the 28 position T-Shade structure located south of the existing tiedown area are scheduled to be removed or relocated. Removal/relocation of these two structures will accommodate larger ARC C-II aircraft movement within this area.

Further land acquisition (±200 acres) is required for Airport expansion/development south of Avra Valley Road. This acquisition includes the land required for the southeast half of the proposed parallel runway (see long term planning horizon), the related T-Hangar development area, airport access road, and future industrial park site.

Land acquisitions, "significant" runway extensions, and new runways are just some of the items that may require an Environmental Assessment (EA) be completed for Avra Valley Airport. Provision for such a study, therefore, has been included in Table 6A for FY 1999-2000.

Finally, a pavement preservation program designed to keep all aircraft ground movement surfaces (i.e., runways, taxiways, aprons, etc.) in safe operating condition is included in the short term planning horizon. The quantity and cost totals listed for Item 27 in Table 6A are exclusive of those areas already scheduled for pavement rehabilitation and preservation under Item 2.

INTERMEDIATE TERM PLANNING HORIZON

The intermediate planning period covers improvement items slated for years 6 through 10 with most of the improvements intended to

increase the Airport's service level and operations capacity. **Total intermediate term planning horizon improvements are estimated to cost approximately $19.5 million.** Each item's estimated development cost is presented in **Table 6B,** and is illustrated, where applicable, on **Exhibit 6B.** Items scheduled for the intermediate term planning horizon include:

TABLE 6B
Capital Improvement Program -
Intermediate Term Planning Horizon

	Total Cost	FAA	ADOT	Local
Intermediate Term Planning Horizon				
1. Environmental Assessment - Runway Extensions and Property Acquisitions	$150,000	$136,590	$6,705	$6,705
2. Extend Runway 30R by 299 feet to 7,200 feet (3,300 s.y.)	$150,000	$136,590	$6,705	$6,705
3. Overlay Runway 12L-30R to 150,000 lbs. (DWL) (77,000 s.y.)	$2,502,500	$2,278,770	$111,862	$111,862
4. Runway 30R: Relocate PAPI-4	$45,500	$41,432	$2,034	$2,034
5. Runway 30R: Relocate REIL	$45,500	$41,432	$2,034	$2,034
6. Runway 30R: Extend MIRL (600 l.f.)	$15,600	$14,205	$698	$698
7. Extend Taxiway A by 299 feet to Runway 30R End (±1,700 s.y.)	$77,350	$70,435	$3,458	$3,458
8. Taxiway A: Extend MITL (±600 l.f.)	$15,600	$14,205	$698	$698
9. Overlay Taxiway A to 150,000 lbs. DWL (89,000 s.y.)	$2,892,500	$2,633,911	$129,295	$129,295
10. Construct High-Speed Exit Taxiways A3 and A6 (±15,200 s.y.)	$691,600	$629,771	$30,915	$30,915
11. Taxiways A3 and A6: Install MITL (1,800 l.f.)	$46,800	$42,616	$2,092	$2,092
12. Widen Taxiway C to 50 Feet (3,500 s.y.)	$159,250	$145,013	$7,119	$7,119
13. Overlay Taxiway C to 150,000 lbs. DWL (12,500 s.y.)	$406,250	$369,931	$18,160	$18,160
14. Taxiway C: Install MITL (5,500 l.f.)	$143,000	$130,216	$6,392	$6,392
15. Construct Aircraft Wash Rack Facility	$65,000	$0	$0	$65,000
16. Relocate Fuel Storage Facility (36,000 gals.)	$450,000	$0	$0	$450,000
17. Construct 40 T-Hangar Positions	$1,685,000	$0	$0	$1,685,000
18. Construct T-Hangar Access Taxilanes and Ramp (45,400 s.y.)	$1,475,500	$0	$1,327,950	$147,550
19. Acquire Property for Aviation Related Development (±95 Acres)	$345,800	$314,885	$15,458	$15,458
20. Construct Phase I Section of Taxiway E (17,000 s.y.)	$773,500	$704,349	$34,576	$34,576
21. Taxiway E (Phase I): Install MITL (2,800 l.f.)	$72,800	$66,292	$3,254	$3,254
22. Construct High-Speed Exit Taxiway E2 (±7,600 s.y.)	$345,800	$314,885	$15,458	$15,458
23. Taxiway E2: Install MITL (900 l.f.)	$23,400	$21,308	$1,046	$1,046
24. Construct Phase I Section of Aircraft Parking Ramp (±102,000 s.y.)	$4,641,500	$0	$4,177,350	$464,150
25. Acquire Property for Aviation Related Development (±260 Acres)	$728,000	$662,917	$32,542	$32,542
26. Pavement Preservation (±380,000 s.y.)	$1,392,253	$0	$1,253,028	$139,225
27. Construct Airport Maintenance Building (3,500 s.f.)	$110,000	$0	$99,000	$11,000
Total Intermediate Term Planning Horizon	$19,450,003	$8,769,753	$7,287,829	$3,394,770

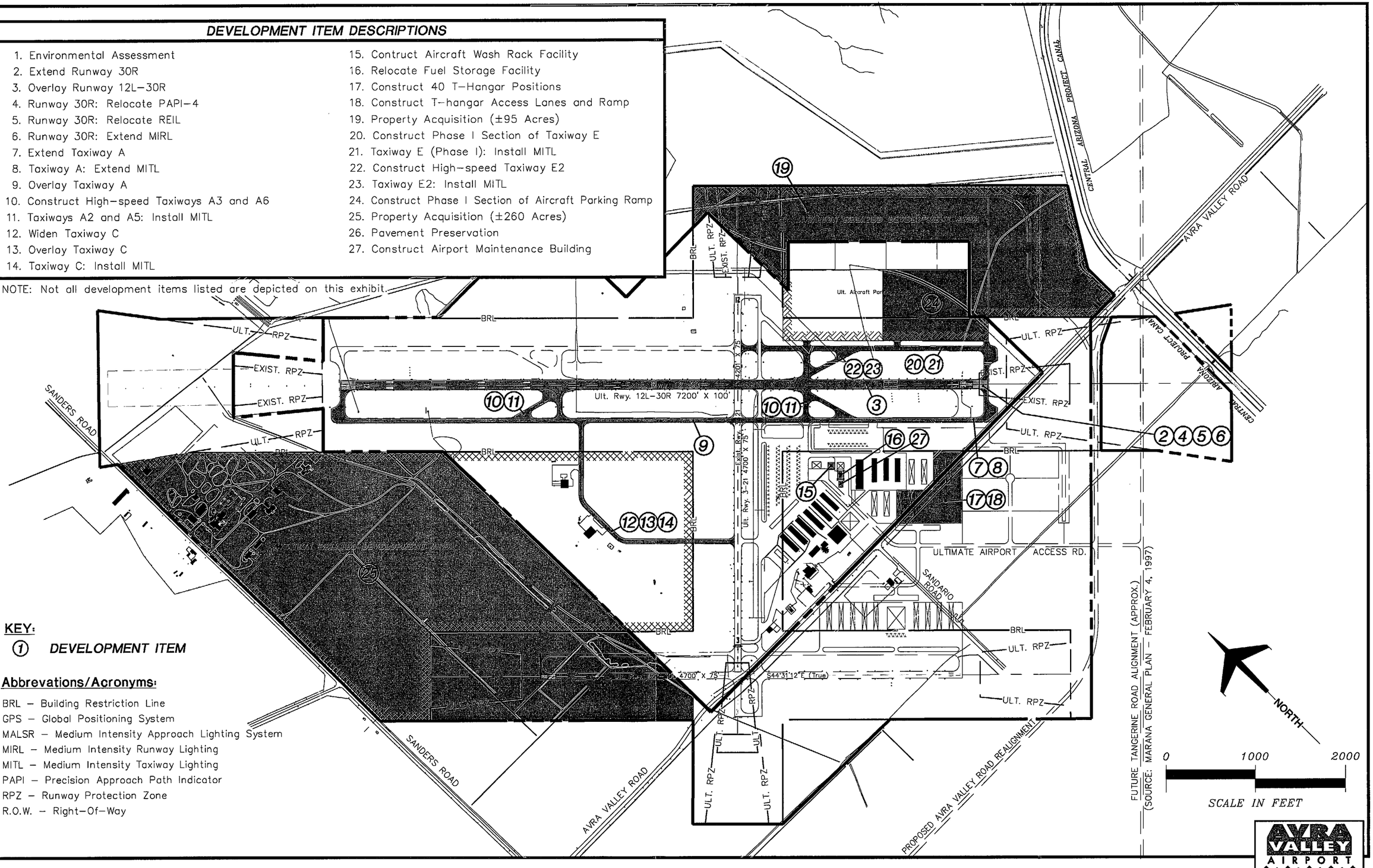
Notes: 1. Each item's total cost includes a 30% design and engineering contingency factor.
2. Totals and subtotals may not agree due to rounding.

96MP09-6B-7/2/1999

DEVELOPMENT ITEM DESCRIPTIONS

1. Environmental Assessment
2. Extend Runway 30R
3. Overlay Runway 12L–30R
4. Runway 30R: Relocate PAPI–4
5. Runway 30R: Relocate REIL
6. Runway 30R: Extend MIRL
7. Extend Taxiway A
8. Taxiway A: Extend MITL
9. Overlay Taxiway A
10. Construct High–speed Taxiways A3 and A6
11. Taxiways A2 and A5: Install MITL
12. Widen Taxiway C
13. Overlay Taxiway C
14. Taxiway C: Install MITL
15. Contruct Aircraft Wash Rack Facility
16. Relocate Fuel Storage Facility
17. Construct 40 T–Hangar Positions
18. Construct T–hangar Access Lanes and Ramp
19. Property Acquisition (±95 Acres)
20. Construct Phase I Section of Taxiway E
21. Taxiway E (Phase I): Install MITL
22. Construct High–speed Taxiway E2
23. Taxiway E2: Install MITL
24. Construct Phase I Section of Aircraft Parking Ramp
25. Property Acquisition (±260 Acres)
26. Pavement Preservation
27. Construct Airport Maintenance Building

NOTE: Not all development items listed are depicted on this exhibit.



KEY:

① *DEVELOPMENT ITEM*

Abbrevations/Acronyms:

BRL – Building Restriction Line
GPS – Global Positioning System
MALSR – Medium Intensity Approach Lighting System
MIRL – Medium Intensity Runway Lighting
MITL – Medium Intensity Taxiway Lighting
PAPI – Precision Approach Path Indicator
RPZ – Runway Protection Zone
R.O.W. – Right–Of–Way

AVRA VALLEY AIRPORT

Exhibit 6B
INTERMEDIATE TERM PLANNING HORIZON IMPROVEMENTS
(6 TO 10 YEARS)

Airside: As discussed in Chapter Three, extending Runway 30R by 299 feet to 7,200 feet will allow greater takeoff length for the full range of aircraft projected to use the Airport. Additionally, the scheduled pavement strengthening overlay of Runway 12L-30R to 150,000 pounds dual wheel gear (DWL) will further enhance it's large aircraft capability. The Runway 30R extension necessitates extending the MIRLs to match the new runway end and also the relocation of the runway's PAPI- 4, and REIL units. Taxiway A along with it's associated edge lighting (MITL) will also be extended at this time, and like the runway, will be overlayed to 150,000 pounds DWL.

Taxiway C, which serves specialty operators on the Airport's west side, is scheduled to be widened to 50 feet, and overlayed to 150,000 pounds DWL. Additionally, MITL taxiway edge lighting is to be installed along the full length of this taxiway.

Further improvements scheduled for this planning horizon include the construction of a second parallel taxiway to Runway 12L-30R. Designated Taxiway E, this taxiway will be located northeast of the runway, and will be constructed in two (2) phases. The Phase I section, scheduled for the intermediate term planning horizon, begins at the new Runway 30R end, and then extends northwest approximately 2,700 feet, intersecting both Taxiway B and Runway 3-21. Taxiway E will also service the new aircraft parking ramp (see Landside section) which is planned for the area north of the Runway 30R end.

Additionally, to enhance operational safety and improve runway efficiency, three (3) high-speed exit taxiways are planned for Runway 12L-30R in this planning horizon. Two (2) of these taxiways, designated Taxiway A3 and A6 respectively, will connect Runway 12L-30R to Taxiway A while the third taxiway, designated Taxiway E2, will connect the runway to parallel Taxiway E. As with Taxiway A, these four (4) planned taxiways (A3, A6, E, and E2) will require MITL taxiway edge lighting to be installed.

As with the previous planning period, a pavement preservation program is scheduled for the intermediate term planning horizon.

Landside: Scheduled for the intermediate planning horizon is the construction of an aircraft wash rack facility. This facility is to be located southeast of and adjacent to the planned general aviation terminal facility which is slated for construction in the long term planning period. The wash rack facility is to be designed to accommodate Design Group I aircraft (49 foot wingspan), and if enclosed or covered, should include a 20-foot tail height clearance. Additionally, this facility must comply with applicable waste water disposal/recovery procedures and regulations.

The current location of the fuel storage facility lies within the future RVZ for Runway 3-21 and Runway 12R-30L. As with the existing aircraft tiedown area discussed under the short term planning horizon, this RVZ "line-of-sight" conflict, as well as the fuel storage facility's potentially hazardous proximity to these two runways' intersection, requires that should the future runway be built, this facility must be relocated. The relocation of this facility is proposed for the area directly south of the previously discussed aircraft wash rack facility located in the future general aviation terminal area. This site offers convenient aircraft and fuel truck access, and eliminates the safety concerns related to the fuel facility's present location.

Located southwest of the relocated fuel storage facility is a 3,500 square foot airport maintenance building.

Construction of four (4) T-hangar structures (40 positions) along with a related 45,400 s.y. of access taxilanes and ramp area is scheduled for this planning period. This development, located near Runway 30R, is an expansion of the T-Hangar development described under the short term planning horizon. The estimated quantities for this ramp and taxilane construction, however, have been more than tripled as this ramp area is being extended to the southwest to provide future taxilane access to parcels in the proposed industrial park.

Located north of Runway 30R, in the 125-acre Aviation Related Development Area, is an ultimate aircraft parking ramp scheduled to be constructed in two phases. Phase I, slated for the intermediate planning horizon, calls for approximately 102,000 s.y. of ramp to be constructed near the Runway 30R end. Approximately 1,150 feet long by 800 feet deep, this section of ramp is parallel to the proposed Taxiway E which will provide runway access to the proposed ramp and development area. The second phase of this ramp's construction is scheduled for the long term planning horizon.

Landside related property acquisitions slated for the intermediate term planning horizon include ±95 acres northeast of Runway 30R in the area reserved for future aviation related development, and a second aviation related development area (±260 acres) which is situated along the western edge of the existing Airport property. Additionally, this second area encompasses land required for the construction of the northwest half of the new parallel runway (see long term planning horizon) and it's related safety areas.

As with the short term planning horizon, property acquisitions, runway extensions, etc. may require that an Environmental Assessment be completed for this planning period. Costs for this EA study have been included in Table 6B which is scheduled for early in the intermediate planning horizon.

LONG TERM PLANNING HORIZON

Based on aviation demand forecasts, conducted in Chapter Two, Avra Valley Airport is expected to have 440 based aircraft and an annual traffic volume of 150,000 operations by the end of the long term planning horizon. The improvements scheduled for the long term planning horizon are intended to keep the airport on pace with those projected based aircraft and operational needs. **Total long term planning horizon improvements are estimated to cost approximately $24.9 million. Table 6C** details the estimated costs of these items while **Exhibit 6C** provides a graphical depiction of the long term planning horizon improvements. The narrative that follows provides a descripition of each the items included in the long term planning horizon.

Airside: The scheduled upgrading of crosswind Runway 3-21's and Taxiway B's pavement strength rating from 12,500 pounds SWL to 30,000 pounds DWL will allow this runway/taxiway configuration to accommodate the majority of corporate type aircraft expected to utilize the Airport in the future.

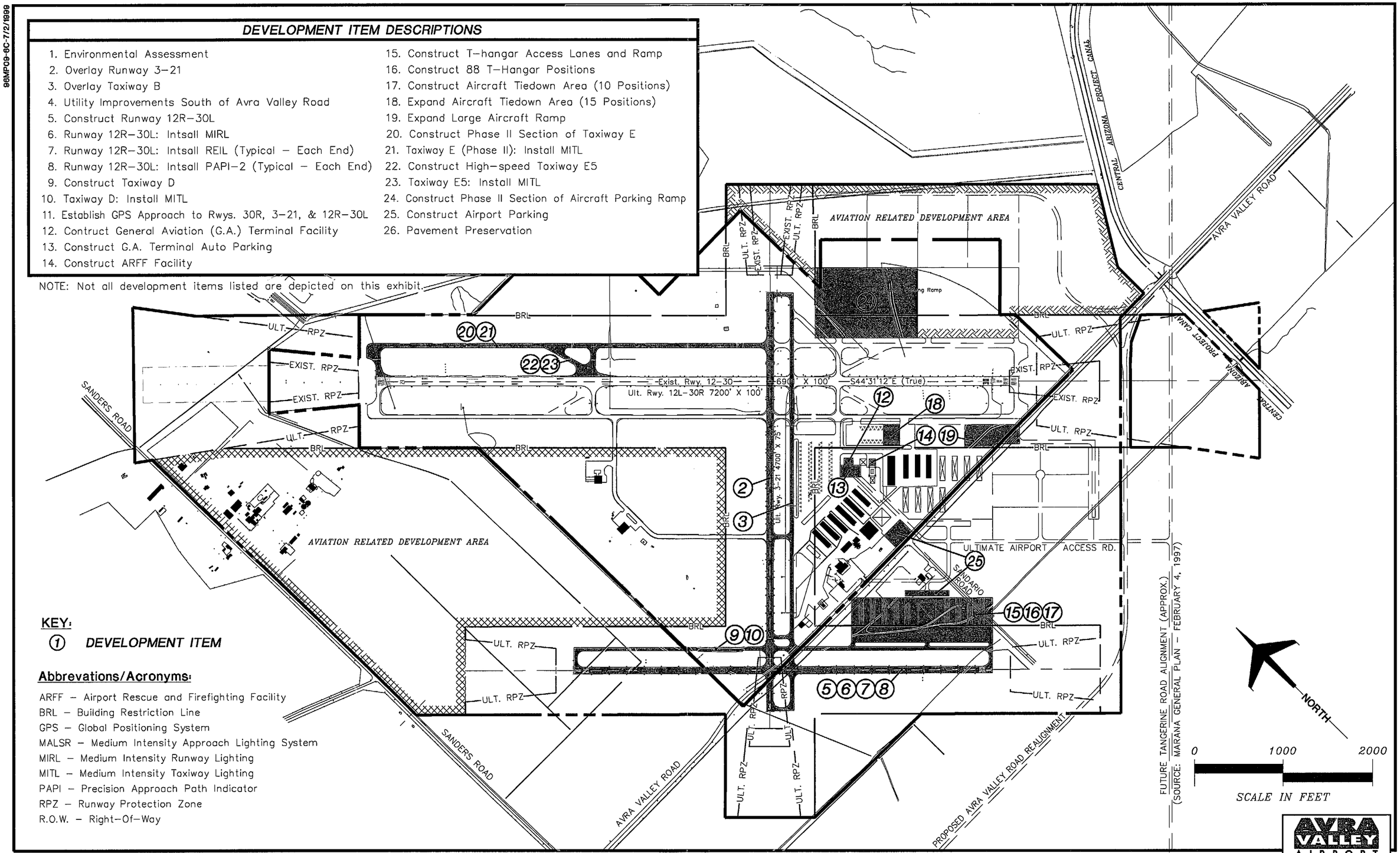
Should the Airport Service Volume (ASV) meet or exceed the 150,000 annual operations forecast in Chapter Two, then the construction of the future parallel runway becomes necessary.

96MP09-6C-7/2/1998

DEVELOPMENT ITEM DESCRIPTIONS

1. Environmental Assessment
2. Overlay Runway 3–21
3. Overlay Taxiway B
4. Utility Improvements South of Avra Valley Road
5. Construct Runway 12R–30L
6. Runway 12R–30L: Intsall MIRL
7. Runway 12R–30L: Intsall REIL (Typical – Each End)
8. Runway 12R–30L: Intsall PAPI–2 (Typical – Each End)
9. Construct Taxiway D
10. Taxiway D: Install MITL
11. Establish GPS Approach to Rwys. 30R, 3–21, & 12R–30L
12. Contruct General Aviation (G.A.) Terminal Facility
13. Construct G.A. Terminal Auto Parking
14. Construct ARFF Facility
15. Construct T–hangar Access Lanes and Ramp
16. Construct 88 T–Hangar Positions
17. Construct Aircraft Tiedown Area (10 Positions)
18. Expand Aircraft Tiedown Area (15 Positions)
19. Expand Large Aircraft Ramp
20. Construct Phase II Section of Taxiway E
21. Taxiway E (Phase II): Install MITL
22. Construct High–speed Taxiway E5
23. Taxiway E5: Install MITL
24. Construct Phase II Section of Aircraft Parking Ramp
25. Construct Airport Parking
26. Pavement Preservation

NOTE: Not all development items listed are depicted on this exhibit.



KEY:

① *DEVELOPMENT ITEM*

Abbrevations/Acronyms:

ARFF – Airport Rescue and Firefighting Facility
BRL – Building Restriction Line
GPS – Global Positioning System
MALSR – Medium Intensity Approach Lighting System
MIRL – Medium Intensity Runway Lighting
MITL – Medium Intensity Taxiway Lighting
PAPI – Precision Approach Path Indicator
RPZ – Runway Protection Zone
R.O.W. – Right–Of–Way

AVRA VALLEY AIRPORT

Exhibit 6C
LONG TERM PLANNING HORIZON IMPROVEMENTS
(10 TO 20 YEARS)

Designated as Runway 12R-30L, this 4,700 foot long by 75 foot wide runway would be serviced by a full-length parallel taxiway, designated Taxiway D. These two items would be constructed to the same ARC B-II standards governing Runway 3-21 and it's parallel taxiway (Taxiway B). Other improvements include the installation of PAPI-2s and REILs to each end of Runway 12R-30L along with the installation of MIRLs for the runway, and MITLs for Taxiway D and it's related exit taxiways.

TABLE 6C
Capital Improvement Program -
Long Term Planning Horizon

	Total Cost	FAA	ADOT	Local
Long Term Planning Horizon				
1. Environmental Assessment - New Runway and Other Construction	$150,000	$136,590	$6,705	$6,705
2. Runway 3-21: Overlay to 30,000 lbs. SWL (40,000 s.y.)	$1,300,000	$1,183,780	$58,110	$58,110
3. Overlay Taxiway B to 30,000 lbs. SWL (20,400 s.y.)	$663,000	$603,728	$29,636	$29,636
4. Utility Improvements South of Avra Valley Road (±150 Acres)	$2,925,000	$0	$2,632,500	$292,500
5. Construct Parallel Runway 12R-30L (40,000 s.y.)	$1,820,000	$1,657,292	$81,354	$81,354
6. Runway 12R-30L: Install MIRL (9,400 l.f.)	$244,400	$222,551	$10,925	$10,925
7. Runway 12R-30L: Install REIL (Both ends)	$91,000	$82,865	$4,068	$4,068
8. Runway 12R-30L: Install PAPI-2 (Both ends)	$91,000	$82,865	$4,068	$4,068
9. Construct Full-length Parallel Taxiway D (20,000 s.y.)	$910,000	$828,646	$40,677	$40,677
10. Taxiway D: Install MITL (10,200 l.f.)	$265,200	$241,491	$11,855	$11,855
11. Establish One Mile GPS Approach to Runways 30R, 3-21, & 12R-30L	$0	$0	$0	$0
12. Construct General Aviation Terminal Facility (3,900 s.f.)	$760,500	$0	$684,450	$76,050
13. Construct G.A. Terminal Auto Parking (±4,500 s.y.)	$146,250	$0	$131,625	$14,625
14. Construct Airport Rescue and Firefighting (ARFF) Facility	$75,000	$0	$0	$75,000
15. Construct T-Hangar Access Taxilanes and Ramp (67,500 s.y.)	$2,193,750	$0	$1,974,375	$219,375
16. Construct 88 T-Hangar Positions	$3,706,560	$0	$0	$3,706,560
17. Construct Aircraft Tiedown Area (10 positions)	$6,500	$5,919	$291	$291
18. Expand Aircraft Tie-down Area (15 Positions)	$9,750	$8,878	$436	$436
19. Expand Large Aircraft Ramp (9,000 s.y.)	$292,500	$266,351	$13,075	$13,075
20. Construct Phase II Section of Taxiway E (28,000 s.y.)	$1,274,000	$1,160,104	$56,948	$56,948
21. Taxiway E (Phase II): Install MITL (4,970 l.f.)	$129,220	$117,668	$5,776	$5,776
22. Construct High-Speed Exit Taxiway E5 (±7,600 s.y.)	$345,800	$314,885	$15,458	$15,458
23. Taxiway E5: Install MITL (900 l.f.)	$23,400	$21,308	$1,046	$1,046
24. Construct Phase II Section of Aircraft Parking Ramp (±102,000 s.y.)	$4,641,500	$0	$4,177,350	$464,150
25. Construct Additional Airport Auto Parking (14,400 s.y.)	$468,000	$0	$421,200	$46,800
26. Pavement Preservation (±671,000 s.y.)	$2,358,232	$0	$2,122,409	$235,823
Total Long Term Planning Horizon	$24,890,562	$6,934,921	$12,484,337	$5,471,311
Total 20 year Planning Period Airport Development Costs	$58,766,819	$22,966,256	$21,187,174	$14,619,889

Notes: 1. Each item's total cost includes a 30% design and engineering contingency factor.
2. Totals and subtotals may not agree due to rounding.

The construction of the Phase II section of Taxiway E scheduled for this planning period will complete Runway 12L-30R's second full-length, parallel taxiway. The Phase II section begins at Taxiway E's Phase I intersection with Runway 3-21, and extends northwest approximately 4,350 feet to the Runway 12L end. Installation of MITL taxiway edge lighting will complete this taxiway.

A fourth high-speed exit taxiway, designated Taxiway E5 is planned to connect the northwest section of Runway 12L-30R to Taxiway E. As with all other taxiways related to Runway 12L-30R, Taxiway E5 requires MITL taxiway edge lighting be installed.

Similar to the two previous planning periods, an EA has been included in the development schedule for the new parallel runway as well as other proposed development.

Additionally, one-mile visibility minimum GPS approaches are recommended for the remaining runway ends at Avra Valley Airport by the conclusion of the long term planning horizon. Since the GPS approach does not require the installation of any ground facilities, it can be implemented at no cost to the Airport. Establishment of these approaches will require airspace coordination with the FAA. Finally, the pavement preservation program scheduled to begin in the short term planning horizon and continue through the intermediate planning period will extend through the long term planning horizon.

Landside: General utility improvement costs, as presented in Table 6C, for landside development south of the present Avra Valley Road alignment were formulated on a "cost-per-acre" basis. This is not a comprehensive, utilities cost estimate, and is, therefore, subject to further refinement during the design and construction phase of any landside development within the area described above.

A general aviation terminal facility, totaling 3,900 square feet, is to be constructed southeast of the existing aircraft tiedown area. Servicing this facility will be a 4,500 s.y. terminal parking area. This new terminal area will connect to the airport access road, the construction of which was discussed in the short term planning horizon section.

Located southeast of the new general aviation terminal facility and adjacent to the proposed aircraft wash rack is the future airport rescue and firefighting (ARFF) facility. Like the utilities development previously discussed, the cost estimate for the ARFF facility is general in nature, as the type of facility required is based on both future operational demands and the Airport sponsor's desired level of capability.

A new T-Hangar development area is planned near the Runway 12L of the new parallel runway. Projects scheduled for construction in this area include: (1) T-Hangar access taxilanes and aircraft parking ramp (67,000 s.y.); (2) 9 T-Hangar structures (±88 positions); and (3) a 10-position aircraft tiedown area. This aircraft parking ramp and T-Hangar area will connect to the new parallel runway via Taxiway D.

The aircraft tiedown area located north of the existing T-Hangar development near Runway 30R is scheduled for expansion in the final planning horizon. This expansion will add 15 positions to the 25 position tiedown area, which was previously constructed during the short term planning horizon.

Also, scheduled for expansion is the large aircraft parking ramp which is located adjacent

to the above tiedown area. In the short term planning period, this ramp's initial construction encompassed approximately 9,000 square yards. Expansion slated for the long term planning horizon calls for an additional 9,000 s.y. of ramp area to be added, effectively doubling the existing ramp's large aircraft parking capacity.

Furthermore, the aircraft parking ramp (Phase I) which was constructed near the Runway 30R end during the intermediate planning horizon, will be completed in the long term planning horizon. The Phase II ramp expansion equals the size of the initial construction, resulting in a total ramp area of ±204,000 s.y., or approximately 2,300 feet in length by approximately 800 feet in depth. As previously discussed, this ramp will service the planned 125-acre Aviation Related Development Area north of Runway 30R.

The Airport's automobile parking area requirements forecast in Chapter Three, were based on terminal area requirements only, as defined by design hour passengers and the percentage of based aircraft requiring automobile parking. Chapter Three also discussed other vehicle parking needs relating to employees, new facilities development, aviation and nonaviation related activities (e.g., public events) at the Airport. Airport parking (14,400 s.y.) slated for the long term planning horizon is divided mainly between two parking areas illustrated on Exhibit 6C. The first area serves the planned T-Hangar development near the southeast end of Runway 12R-30L, and the second area, located south of existing Hangar "D," is planned to satisfy the additional vehicle parking requirements described above.

AIRPORT DEVELOPMENT AND FUNDING SOURCES

Financing future airport improvements will not rely exclusively upon the financial resources of the Airport's sponsor, Pima County. Airport improvement funding assistance is available through various grant-in-aid programs at both the state and federal levels. The following discussion outlines the key sources for airport improvement funding and how they can contribute to the successful implementation of this master plan.

FEDERAL AID TO AIRPORTS

The United States Congress has long recognized the need to develop and maintain a system of aviation facilities across the nation for national defense and promotion of interstate commerce. Various grant-in-aid programs to public airports have been established over the years for this purpose. The current federal grant-in-aid program is the Airport Improvement Program (AIP) established in 1982. AIP has been reauthorized several times since 1982, however, the authorized spending levels have varied annually.

The Fiscal Year (FY)99 Omnibus Appropriations Act had appropriated $975 million for the AIP through March 31, 1999 - half of the $1.95 billion obligational authority for the year. Congress had failed to pass a full year reauthorization of the AIP due to conflicts surrounding capacity "slot" allotments at four major airports and existing service rules at Washington Dulles International Airport.

However, prior to the March 31, 1999 funding expiration date, Congress did give approval to funding the Fiscal Year (FY)99 AIP through May 31, 1999. Currently, both the House and Senate are working separately on multi-year funding programs.

The funding levels authorized in the legislation are not always the levels appropriated in the annual Congressional budget process. In fiscal year 1996, the AIP authorized level was $2.161 billion, but only $1.45 billion was appropriated. Only $1.46 billion of the authorized $2.28 billion was appropriated in 1997. For fiscal year 1998, $1.7 billion of the authorized $2.347 billion was appropriated. The source for AIP funds is the Aviation Trust Fund. The Aviation Trust Fund was established in 1970 to provide funding for aviation capital investment programs (e.g., facilities and equipment, research and development, and grants for airport development and expansion projects). A majority of the FAA's operations account is financed through the Aviation Trust Fund. The Aviation Trust Fund is funded by federal user fees and taxes on airline tickets, aviation fuel, and various aircraft parts.

AIP Funds are distributed each year by the FAA under authorization from the United States Congress. A portion of each year's authorized level of AIP funding is distributed to all eligible commercial service airports through an entitlement program that guarantees a minimum level of federal assistance each year. These dollars are calculated based upon enplanement and cargo service levels.

The remaining AIP funds are distributed by the FAA to airports based upon the priority of the project for which they have requested Federal assistance. A National Priority Ranking System is used to evaluate and rank each airport project. Those projects with the highest priority are given preference in funding.

Each airport project for Avra Valley Airport must follow this procedure and compete with other airport projects in the State for AIP State Apportionment dollars and across the country for other Federal AIP funds. An important point to consider is that, unlike entitlement dollars for commercial service airports, federal funding is not guaranteed for Avra Valley Airport.

In Arizona, airport development projects that meet FAA's eligibility requirements receive 91.06 percent funding from the AIP. Eligible projects include any public use facility such as airfield and apron improvements. Revenue generating improvements such as fuel facilities and hangars are generally not eligible for AIP funding. FAA has historically not funded these types of facilities, but currently are under review by the agency for consideration as an eligible airport improvement in the future.

FAA FACILITIES AND EQUIPMENT PROGRAM

The Airway Facilities Division of the FAA administers the national Facilities and Equipment (F&E) Program. This annual program provides funding for the installation and maintenance of various navigational aids and equipment for the national airspace system and airports. Under the F&E program, funding is provided for FAA air traffic control towers, enroute navigational aids such as VOR's, and on-airport navigational aids such as PAPIs, and approach lighting systems. As activity levels and other development warrant, the Airport may be considered by the FAA Airways Facilities Division for the installation and maintenance of navigational aids through the F&E program.

Recommended improvements in this master plan which may be eligible for funding through the F&E program include the PAPIs for each runway end as well as the MALSR for Runway 12L. Should the Airway Facilities Division of the FAA install these navigational aids at the airport, they would be operated and maintained by the FAA at no expense to the airport.

STATE AID TO AIRPORTS

In support of the state airport system, the State of Arizona also participates in airport improvement projects. The source for State airport improvement funds is the Arizona Aviation Fund. Taxes levied by the State on aviation fuel, flight property, aircraft registration tax, and registration fees, (as well as interest on these funds) are deposited in the Arizona Aviation Fund. The Transportation Board establishes the policies for distribution of these State funds.

Under the State of Arizona grant program, an airport can receive funding for one-half (4.47 percent) of the local share of projects receiving federal AIP funding. The State also provides 90 percent funding for projects, such as pavement maintenance, which are not eligible for AIP funding.

State Airport Loan Program

The Arizona Department of Transportation - Aeronautics Division (ADOT) recently established the Airport Loan Program. This program was established to enhance the utilization of State funds and provide a flexible funding mechanism to assist airports in funding improvement projects. Eligible projects include runway, taxiway, and apron improvements; land acquisition, planning studies, and the preparation of plans and specifications for airport construction projects, as well as revenue generating improvements such as hangars and fuel storage facilities. Projects which are not currently eligible for the State Airport Loan Program are considered if the project would enhance the airport's ability to be financially self-sufficient.

There are three ways in which the loan funds can be used: Grant Advance, Matching Funds, or Revenue Generating Projects. The Grant Advance loan funds are provided when an airport can demonstrate the ability to accelerate the development and construction of a multi-phase project. The project(s) must be compatible with the Airport Master Plan and be included in the ADOT 5-year Airport Development Program. The Matching Funds are provided to meet the local matching fund requirement for securing federal airport improvement grants or other federal or state grants. The Revenue Generating funds are provided for airport-related construction projects that are not eligible for funding under another program.

LOCAL FUNDING (Pima County)

The balance of project costs, after consideration has been given to grants, must be funded through local (Pima County) resources. For most airports, there are several alternatives for local finance options for future development at the airport, including airport revenues, direct funding from the County, bonds, and leasehold financing.

Several bonding options which may be available to Pima County include: general obligation bonds, limited obligation bonds, and revenue

bonds. General obligation bonds are a common form of tax supported bonds which are issued by voter approval and are secured by the full faith and credit of the County. County tax revenues are pledged to retire the debt. As instruments of credit, and because the County secures the bonds, general obligation bonds reduce the available debt level of the County. Due to the County's pledge to secure and pay general obligation bonds, they are the most secure type of government-issued bond and are generally issued at lower interest rates and carry lower costs of issuance. The primary disadvantages of general obligation bonds are that they require voter approval and are subject to statutory debt limits. This requires that they be used for projects that have broad support among the voters, and they be reserved for projects that have the highest public priorities.

In contrast to general obligation bonds, limited obligation bonds (sometimes referred to as a Self Liquidating Bonds) are secured by revenues from a local source. While neither general fund revenues nor the taxing power of the local government is pledged to pay the debt service, these sources may be required to retire the debt if pledged revenues are insufficient to make interest and principal payments on the bonds. These bonds still carry the full faith and credit pledge of the County and therefore are considered, for the purpose of financial analysis, as part of the debt burden of the County government. The overall debt burden of the County would be a factor in determining interest rates on municipal bonds.

There are several types of revenue bonds. In general, they are a form of municipal bond which is payable solely from the revenue derived from the operation of a facility that was constructed or acquired with the proceeds of the bonds. For example, a Lease Revenue Bond is secured with the income from a lease assigned to the repayment of the bonds. Revenue bonds have become a common form of financing airport improvements. They present the opportunity to provide those improvements without direct burden to the taxpayer. One drawback of revenue bonds is that they normally carry a higher interest rate, because they lack the guarantees of general and limited obligation bonds.

Leasehold financing refers to a developer or tenant financing improvements under a long-term ground lease. The obvious advantage of such an arrangement is that it relieves the County of all responsibility for raising the capital funds for improvements. However, the private development of facilities on a ground lease, particularly on property owned by a government agency, produces a unique set of problems. In particular, it is more difficult to obtain private financing as only the improvements and the right to continue the lease can be claimed in the event of a default. Ground leases normally provide for the reversion of improvements to the lessor at the end of the lease term, which reduces their potential value to a lender taking possession. Also, companies that want to own their property as a matter of financial policy may not locate where land is only available for lease.

Master ground leases, such as currently exists between TAC, Inc. and the County, offer a substantial financial advantage to a private developer as there are not any up-front acquisition costs and lease payments are fully deductible for tax purposes; whereas, owned land cannot be depreciated. This option can be structured as a straight ground lease or as a joint venture. Under the current straight ground lease to TAC, Inc., the County is not involved in the construction, financing, sale, or lease of

buildings for tenants. In the future, however, there may be circumstances where the airport sponsor will want to participate in the construction of facilities, either as part of a joint venture or to provide inducements to attract certain tenants. The simplest way to do this would be to underwrite the construction and financing of those facilities, keeping them in sponsors ownership and leasing them to tenants.

As a joint venture partner, the County would provide funds for construction and permanent financing. A joint venture could be structured so that the various benefits would be available for each partner according to their highest use; for example: tax benefits (such as depreciation) would go to the private developer while cash income would go to the County. This could be used successfully to fund individual buildings for specific tenants, where lower rents could be charged in exchange for partial ownership, producing income from both rents and interest payments.

These financing techniques offer marketing inducements, as they assume the County can obtain lower-cost funds than are available in the private market. These lower costs can then be passed through to the development process to reduce lower rental rates. To avoid the appearance of unfairly competing with the private sector, it will be important to establish comparable market rental rates.

The following sections examine Avra Valley Airport's operating revenues and expenses which have been summarized historically in **Table 6D, Historical Operating Revenues and Expenditures.**

Table 6D
Historical Operating Revenues and Expenditures

	Fiscal Year 1991-92	Fiscal Year 1992-93	Fiscal Year 1993-94	Fiscal Year 1994-95	Fiscal Year 1995-96	Fiscal Year 1996-97	Fiscal Year 1997-98	Fiscal Year 1998-99 (Partial)
Operating Expenditures Operations, Maintenance and Administration	$208,233	$98,246	$91,976	$140,126	$283,183	$157,289	$206,878	$77,613
Operating Revenues Rents and Royalties	$24,120	$23,095	$33,012	$32,785	$32,454	$44,552	$51,739	$38,267
Income Surplus (Deficit)	($184,113)	($75,151)	($58,964)	($107,341)	($250,729)	($112,737)	($155,139)	($39,346)

Note: Fiscal Year 1998-99 Operating Expenditures and Revenues reflect year-to-date totals for the period July 1998 through April 1999.
Source: Pima County Department of Transportation and Flood Control.

Airport Operating Revenues

In general, airport operating revenues are generated from fees and lease agreements with users of the airport property. The majority of the County's current operating revenue for Avra Valley Airport comes from a master land lease granted to Tucson Aeroservice, Inc., the Airport's main FBO. Additionally, the county receives a percentage of the fuel flow (gross fuel sales), tiedown and hangar fees collected by TAC, Inc., which operates theses facilities at the Airport under the terms of their lease agreement. Other miscellaneous operating revenue collected

by the County may include fees generated from airport concessions and special events. For ease of reporting, all of the above revenue has been grouped under the heading "Rents and Royalties" as depicted in Table 6D.

Airport Operating Expenses

An airport's operating expenses include several broad categories ranging from administration (i.e., salaries and benefits); to professional services that may include outside legal, engineering and/or consultant services not performed by County staff; to office supplies and general Airport maintenance costs as well other miscellaneous overhead items. Like the Airport's operating revenues, for ease of reporting, Avra Valley Airport's expenses have been consolidated into one general category titled "Operations, Maintenance, and Administration".

Conclusion

Due to the current negotiations between the County, Town of Marana, and Tucson Aeroservice Center, regarding leases and airport ownership, as well as the uncertainty of future land lease/FBO agreements at Avra Valley Airport, a long range cash flow projection has not been prepared.

Although the data in Table 6D shows Avra Valley Airport operating at a deficit over the past eight years, this information alone is not a true indicator of the Airport's economic value to Pima County and the surrounding communities. A more in depth analysis detailing the Airport's regional economic impact is presented in the **Economic Benefit Study** provided in **Appendix D**. Using various measures and types of economic benefits, this study presents the reader with a clearer picture of the actual economic value the Airport brings to Pima County as a whole.

Additionally, a second study, **Rates and Fees Analysis, Appendix E**, has been completed as part of this Master Plan. The purpose of this study is to assist Pima County in determining reasonable rates and charges for airport facilities by estimating the existing market rental rates of various airport facilities. The Rates and Fees Analysis includes a real estate rental and market study concerning several existing County-owned parcels at Avra Valley Airport. A second land rental study regarding "typical" 1, 5, 10 and 15 acre tracts with taxiway access is also included. A thorough search of competitive land and hangar rentals was conducted in order to value Airport properties at their respective highest and best use. The data used to generate the Rates and Charges Analysis was gathered through meetings and interviews with the appropriate local, County and State agencies. This analysis provides recommendations to Pima County for establishing rental amounts in order to be in compliance with FAA requirements.

PLAN IMPLEMENTATION

The best means of beginning the implementation of recommendations of this master plan is to first recognize that planning is a continuous process that does not end with completion of the master plan. Rather, the ability to continuously monitor the existing and forecast status of airport activity must be provided and maintained. The fundamental issues upon which this master plan is based will remain valid for several years. As such, the primary goal is for the Airport to evolve into a facility that will best serve the air transportation

needs of the region and to evolve into a self-supporting economic generator for both Pima County, the Town of Marana, and other surrounding communities. Toward meeting this goal, successful implementation of airport improvement projects will require sound judgement by Pima County. Among the more important factors influencing the decision to carry out a specific improvement are timing and airport activity. Both factors should be used as references in the implementation of the master plan. In this master plan, focusing on the timing of airport improvements was necessary. However, the actual need for facilities is more appropriately established by airport activity levels rather than a specified date.

For example, projections have been made as to when additional T-hangar facilities would be needed to accommodate based aircraft growth. However, in reality, the time frame in which additional facilities are needed may be substantially different. Actual demand may be slow in reaching forecast activity levels. On the other hand, increased based aircraft totals may establish the need for new facilities much sooner. Although every effort has been made in this master planning process to conservatively estimate when facility development may be needed, aviation demand will dictate when facility improvements need to be accelerated or delayed.

The real value of a usable master plan is that it keeps the issues and objectives in the mind of the user so that he or she is better able to recognize change and its effect. In addition to adjustments in aviation demand, decisions made as to when to undertake recommended improvements in this master plan will impact the period that the plan remains valid. The format used in this plan is intended to reduce the need for costly updates. Updating can be done by the user, improving the plan's effectiveness.

In summary, the planning process requires that Pima County consistently monitor the progress of the Airport in terms of total aircraft operations, total based aircraft, and overall aviation activity. Analysis of aircraft demand is critical to the exact timing and need for new airport facilities. The information obtained from continually monitoring airport activity will provide the data necessary to determine if the development schedule should be accelerated or delayed.